



Published by and for the members of the
AIAA Delaware Section

November 2018

Shaping the Future of Aerospace

Delaware Section

FLIER

Message from the Chair:

Delaware Section Members –

I hope everyone had an excellent Thanksgiving this November, I know our council and volunteers certainly enjoyed the break after a busy month! We held our second lunch and learn of the season, where I presented on High Power Rocketry on October 31st, one day prior to our Distinguished Lecture Dinner, where Dr. Mark Lewis spoke on hypersonics. Timothy Dominick was selected as our Delaware Section's 2018 Engineer of the Year and was submitted to Region I for consideration. He was officially recognized at our Distinguished Lecture Dinner, and there is a brief write-up in this month's newsletter. We supported several STEM events including a Rocket Launch Program, Cecil County STEM Festival, and National Chemistry Week. Kyle Panariello, Di Ena, and I met with the University of Delaware student branch to discuss their progress with branch formation and their RC plane competition. They are doing well on both accounts. With all of these activities, we were unable to coordinate a November lunch and learn, but we plan to host an extra lunch and learn next year. December's lunch and learn will be a DVD viewing given the upcoming holiday season with many people vacationing.

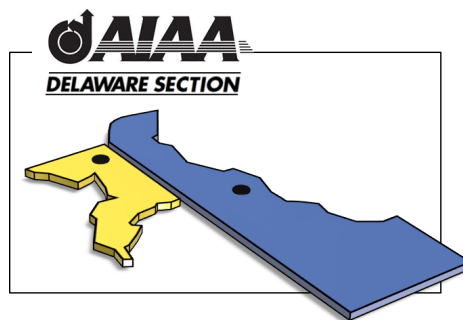
As always, if there are any events or activities you would like to see, please don't hesitate to reach out to the council members.

Clear Skies!

David Fox

Inside this issue:

STEM Mentors Needed	-
Distinguish Lecture Dinner	2
Engineer of the Year	2
October Lunch and Learn	2
STEM Corner (cont'd)	4
Dec Lunch and Learn Flyer	5
YP Events	6
Escape Room Flyer	7
Public Policy	8
DE Section Information	9



STEM Corner (Science, Technology, Engineering, & Mathematics)

Mentors Needed for Cecil County High School Students

Cecil County Public Schools is looking for people to mentor high school students on their STEM capstone projects. If you're interested in the full list of questions or learning more, contact elishabet.lato@ngc.com

Some questions on the list include, "Attempting to create a silent propeller for use with Unmanned Aerial Vehicle (drones) and applications on a larger scale", "How do different materials used for the infill of a turf field affect the temperature of the field's environment for players? (therefore reducing the temperature of the field)", and "How does the mass of a rocket affect the maximum velocity and distance?"

Around AIAA, Industry, and Our Section

Distinguished Lecture Dinner on Hypersonic Flight

On November 1st, the AIAA Delaware Section hosted Dr. Mark Lewis as our Distinguished Lecturer at Klondike Kate's in Newark, DE. Dr. Lewis gave his talk "Hypersonic Flight: Progress and Challenges on the Way to High Mach Systems" to an audience of 27 members, non-members, and students. The event started with the presentation of the 2018 Delaware Section Engineer of the Year award to Tim Dominick (see EOY article for more information). After dinner, Dr. Lewis gave his presentation covering a brief history of hypersonic flight and a discussion on progress made in recent years and challenges still to overcome. The audience had a wide cross section of AIAA members and non-members, 9 University of Delaware undergraduate and graduate students as well as one professor. The night was entertaining and educational.

2018 Delaware Section Engineer of the Year

The AIAA Delaware Section congratulates Timothy (Tim) Dominick on his selection for the 2018 Delaware Section Engineer of the Year! Tim is an Advanced Concepts Engineer at Northrop Grumman Innovation Systems (NGIS), where his primary responsibilities are for design and development of thermal management subsystems for aerospace systems including solid rocket motors, air-breathing systems, and re-entry vehicles. As a regular session chair for USACA's Annual Conference on Composites, Materials, and Structures with more than 40 of his own publications on the subject of material development and application, Tim is often relied on to lead design efforts of materials, nozzle components, leading edges, etc., as well as review and consult on other designs. Tim was nominated for this year's Engineer of the Year award for the successful development and demonstration of a novel ceramic-matrix-composite (CMC) material, JT-700. From 2013-2017, Tim led NGIS MD&C's Internal Materials Working Group (IMWG), tasked with developing a multitude of new materials for solid propulsion control systems through collaboration with several suppliers and customers. Not only was the JT-700 material developed and successfully demonstrated, but Tim developed a technology roadmap for this new class of CMCs and coordinated the technology development across nine different suppliers. Tim's contribution of JT-700, combined with his direction and guidance of CMC development across multiple material suppliers has significantly advanced the aerospace industry's material capabilities through the contribution of a novel material, and has also driven many industry suppliers to enhance their own capabilities and expertise. Congratulations, Tim!

October Lunch and Learn Recap

The Delaware Section's October Lunch Lecture was held on Wednesday, October 31st in the Northrop Grumman G-29 Executive Conference Center. David Fox presented on high power rocketry spanning a broad range of topics including rocket construction, rules of thumb, trajectory prediction, and exciting projects. Pictured left, Dave hoists the assembled airframe of his rocket "TORQUE." Approximately 35 attendees gathered for the unique blend of physics education, thrilling videos, and anecdotal tales of David's own experiences with the hobby.





Distinguished Lecture Dinner at Klondike Kate's in Newark, DE



Breanne Sutton, Vice Chair, presents Tim Dominick with the 2018 Engineer of the Year Award



Tim Dominick with son, Ryne, after accepting the 2018 Engineer of the Year Award

STEM Corner (Science, Technology, Engineering, & Mathematics)

2018 National Chemistry Week

On November 3rd, in partnership with the Northrop Grumman Innovation Systems' (NGIS) STEM Council, AIAA Delaware Section Chair David Fox and NGIS employee Kelly Storrs, supported National Chemistry Week at Independence School in Delaware. David and Kelly helped approximately 200 students over the span of 4 hours with assembling and launching alka-seltzer rockets. This is a recurring event that AIAA hopes to continue supporting into the future.



L: Kelly Storrs teaches future engineers about Alka Seltzer rockets at National Chemistry Week. R: Tim Dominick guides families through the propellant manufacturing process with rice krispies and sprinkles at the Maryland STEM Festival.

Cecil County STEM Festival

On November 8th, AIAA Vice Chair Breanne Sutton participated in Cecil County's STEM Festival for county 4th, 5th and 6th grade students at North East High School. Breanne hosted an "Ask Me About My Job" table that students were able to visit between their sessions. In addition to answering questions about engineering and rockets, Breanne showed videos of static motor tests and explained how propellant is made. Over 400 students attended the event.



3...2...1..Rocket Launch

On November 11th, 30 families participated in a Rockets 101 event at the Elkton Branch of the Cecil County Public Library as part of the Maryland STEM Festival. AIAA DE Section Public Policy Chair Tim Dominick and Northrop Grumman Missile Defense and Controls STEM Council Member Anthony LoRusso supported the event. The event started with a presentation on how rockets work followed by three different rocket building activities: straw rockets, balloon rockets, and simulated solid propellant manufacturing. Each activity was designed to teach the families different aspects of rocket flight and control. By far, the favorite activity was the simulated solid propellant manufacturing, mostly because of the addition of sprinkles as the burn rate additive to the rice krispy propellant!

AMERICAN INSTITUTE OF AERONAUTICS & ASTRONAUTICS
AIAA DELAWARE SECTION PRESENTS
CAREER ENHANCEMENT/EDUCATION
LUNCH LECTURE SERIES PROGRAM

WHEN WE LEFT EARTH: THE NASA MISSIONS
PART 3: LANDING THE EAGLE

Produced by the Discovery Channel in 2008 to celebrate NASA's fiftieth anniversary, "When We Left Earth: The NASA Missions" chronicles America's manned space program. This six part series spans the period from flight testing the X-15 rocket plane and the first Mercury missions thru the construction of the International Space Station and the loss of the Space Shuttle *Columbia*.

Part 3: Landing the Eagle focuses on the Apollo program from the tragic Apollo 1 fire that claimed the lives of Gus Grissom, Ed White and Roger Chaffee up through the historic Apollo 11 moon landing on July 20, 1969.



For AIAA Members, Guests and Prospective Members

THURSDAY, DECEMBER 13, 2018
NOON - 1 PM

Northrop Grumman/Elkton
G-29 Executive Conference Center

\$1.00 FOOD and DRINKS WILL BE SERVED UNTIL WE RUN OUT!

For more information contact:	David Fox, Chair	410-392-1346
	Breanne Sutton, Vice Chair	410-392-1661
	Ian Beringer, Secretary	410-392-1388
	Noah Gold, Treasurer	410-392-1771

Around AIAA, Industry, and Our Section

YP Event - First Man Movie Night

On October 26th, members of AIAA gathered for a happy hour at McGlynn's Pub and Restaurant, followed by a night at Regal Peoples Plaza Stadium 17 movie theater to see First Man. We had seven attendees, members and non-members, to the movie. The movie follows the story of Neil Armstrong in the years leading up to the Apollo 11 mission to the moon in 1969. Members hung around for a few minutes after the movie for inspired space exploration conversation and joking. It was a successful Friday night at the movies with AIAA .

YP Event Coming Soon! - Race to Escape

We continue to nail down details for the Escape Room event as the competition heats up. Katie has been quoted "It's over before it even starts" and "those Sudoku puzzles you have been doing won't help ", while Dan has been quoted "she couldn't find her way out of a wet paper bag". The event will be hosted at Exodus Escape Rooms in Newark, DE, where the two teams will be placed into separate rooms with similar difficulties and given an hour to escape. The costs are \$10 for members and students, and \$15 for non-members. Following the competition, we will be meeting for a happy hour to celebrate the winners! Happy hour location to be determined. Please see flyer on the next page.

Engineers Week - February 2019

EWEEK 2019 is quickly approaching! The DE Section will be planning in December and January to make for a amazing, week-long event!





Join the AIAA DE Section in a Race to Escape!

**As the incumbent Young Professionals
Chair, Dan Nice, steps aside, he is
challenging his successor, Katie
Barbor, to a race of skill and wit!**

**Does Katie have what it takes to
be YP Chair?**

**Pick a side join us as the AIAA
DE Section battle of old vs.
new YP Chair goes down!**

**Where:
Axxiom
Escape Room,
Newark, DE**

**When:
Thursday
January 24th
5:30 PM**

**Contact Dan for details
and reserve your spot**

Phone: 410-392-1311

**Email:
Daniel.Nice@ngc.com**



**Contact Katie for details
and reserve your spot**

Phone: 410-392-1595

**Email:
Katie.Barbor@ngc.com**

Whose side are you on?

Public Policy in Action

As the world's largest aerospace professional society, AIAA plays a key role in the national public policy debate. This section highlights current policy issues of importance to the Aerospace community.

FAA Reauthorized for Five Years

Congress passed a [long-term FAA authorization bill](#) that will expire 30 September 2023. The FAA was last authorized in 2012 and had been operating under a series of five short-term extensions. Among other things, the legislation streamlines the aircraft certification process to ensure U.S. companies can compete globally and get their products to market on time, allows the FAA to certify new civil supersonic aircraft with reduced sonic booms, advances low-altitude UAS traffic management (UTM) systems and furthers regulation of unmanned aircraft operations, and establishes methods aimed at encouraging the younger generation and women to enter the aviation workforce. Additionally, it establishes an Office of Spaceports that is intended to support commercial licensing of launch sites and develop policies to promote infrastructure improvements at such facilities. The bill also creates a category of commercial spaceflight vehicles that cover parts of launch vehicles systems flying for other purposes.

A measure to reform the nation's air traffic control organization was left out of the final bill; however, authorizers call for a detailed analysis of air traffic control costs imposed and revenues received by the varying segments of airspace users.

Bill Bolstering Skills Training for Technical Jobs Signed by President

On 31 July, President Trump signed into law the Strengthening Career and Technical Education for the 21st Century Act ([P.L. No. 115-224](#)). The bill increases federal funding for the Carl D. Perkins Career and Technical Education Program, which was last reauthorized in 2006, by up to \$1.3 billion annually. Besides continued funding, the legislation updates career and technical education to ensure access to high-quality programs, help recruit and retain educators, and assist workers and students in obtaining the necessary skills to find in-demand jobs. It also encourages states, schools, and local career and technical education providers to align education and job training with local economies, as well as improves alignment with the Workforce Innovation and Opportunity Act and Every Student Succeeds Act. AIAA applauds the passage of this key issue. Renewing and updating the Perkins Act will help address the industry's workforce challenges and provide students and workers with additional and better opportunities to gain the skills necessary for in-demand aerospace careers.

Executive Order Issued on Job Training

At a signing ceremony on 19 July, President Trump issued an [executive order](#) designed to boost job training and vocational opportunities. As part of the executive order, the White House will establish a National Council for the American Worker, composed of senior administration officials, who will develop a nationwide strategy for training workers in industries that have a high workforce potential, which includes the aerospace sector. The order also calls for the creation of an advisory board made up of leaders from the private sector, educational institutions, philanthropic organizations, and state governments.

National A&D Workforce Summit Held on Capitol Hill

The Aerospace Industries Association and AIAA partnered to host the 2018 National Aerospace & Defense Workforce Summit on 2 October. The summit engaged congressional staff and aerospace sector leaders in a discussion of industry strategies for developing a dynamic 21st-century workforce. Participants reviewed progress on goals set during the [2016 national summit](#) and considered new policy objectives for enhancing STEM education and workforce development in the United States. Congressman Anthony Brown (D-MD), a champion for education and workforce initiatives, provided remarks. Lockheed Martin was a platinum sponsor of the event and Rolls-Royce was a gold sponsor. A proceedings report will be issued by both organizations at a later date.

2018-2019 Council Members

Chair David Fox, Northrop Grumman; (410) 392-1346 David.Fox@ngc.com
Vice-Chair Breanne Sutton, Northrop Grumman; (410) 392-1661 Breanne.Sutton@ngc.com
Treasurer Josh Steele, Northrop Grumman; (410) 392-1023 Joshua.Steele@ngc.com
Secretary Ian Beringer, Northrop Grumman; (410) 392-1388 Ian.Beringer@ngc.com
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Career Enhancement Tim McCardell, Northrop Grumman; (410) 392-1560 Timothy.McCardell@ngc.com
Young Professional Daniel Nice, Northrop Grumman; (410) 392-1311 Daniel.Nice@ngc.com
STEM/K-12 Outreach Elishabet Lato, Northrop Grumman; Elishabet.Lato@ngc.com
Public Policy Tim Dominick, Orbital ATK; (410) 392-1069 Timothy.Dominick@ngc.com
Communications Christina Larson, Orbital ATK; (410) 392-1138 Christina.M.Larson@ngc.com
Membership Noah Gold, Orbital ATK; (410) 392-1771 Noah.Gold@ngc.com
Programs Entire Council
RAC Representatives David Fox and Breanne Sutton

The AIAA Delaware Section

The Delaware Section is part of the American Institute of Aeronautics and Astronautics, the world's largest technical society dedicated to the global aerospace profession. The AIAA primary purpose is to advance the state of the art, sciences and technology of aeronautics and astronautics and to promote the professionalism of those engaged in these pursuits. The institute serves as the vehicle for focusing the energies and interests of its members in their own technical and professional development and service to society.

AIAA Website

The AIAA Web site (www.aiaa.org) continues to receive over 45,000 visits per month and serves as a point-of-purchase for memberships, meeting registrations and subscriptions. It also provides access to bibliographic data of AIAA meeting papers for the past five years as well as connections to web sites of individual AIAA section chapters.

Membership

We continue to be encouraged by the number of new or prospective members that have recently shown an interest in the Delaware AIAA. If you know of any prospective members, please have them call Noah Gold, to obtain an application. Also, if you wish to be upgraded to Senior Member, Associate Fellow or Fellow, contact Breanne for details and an upgrade application form.

ARE YOU HAVING A MEMBERSHIP OR SUBSCRIPTION PROBLEM?

If you are having a membership or subscription problem you can contact AIAA customer service at 1/800-639-2422 or via fax at 703/264-7657.

If the AIAA staff is not responsive, let your AIAA Ombudsman, John Walsh, cut through the red tape for you. John can be reached at 703-893-3610 or by writing to him at: 8800 Preswould Place, McLean, VA 22102.

Have You Checked out the AIAA Journal?

AIAA's journals are the best resource for students and professionals who want to stay current on the latest aerospace research and development. Reporting on the most important aerospace advances, AIAA's seven active technical journals feature original research papers spanning the spectrum of aerospace science and technology. They include methods of analysis, technical knowledge, exploratory development, and new applications. There are over 50 years of archives stretching back to the times of the American Interplanetary Society, predecessor to the American Rocket Society. We have provided a link below and hope you take some time to browse all the great information available to you. <http://www.aiaa.org/journals/>

Category of Membership	2016–2017
Associate Member, Member, and Senior Member Retired/ Return to Full-Time Study / Spouse / Unemployed (50% of member dues)	\$120 \$60.00
Associate Fellow Retired / Return to Full-Time Study / Spouse /Unemployed (50% of Associate Fellow dues)	\$131 \$65.50
Fellow Retired / Return to Full-Time Study / Spouse / Unemployed (at 50% of Fellow dues)	\$153 \$76.50
Full Time Student	\$25.00
Student to Professional Transition*	
2 nd year	\$30
3 rd year	\$60
4 th year - full member rate	\$90

AIAA DE Section Member Numbers

Professional Members	54
• Members	43
• Associate Fellows	9
• Fellows	2
Educator Associates	37
Student Members	9

If you know a [Young Aerospace Professional](#) in the first five years of professional practice, AIAA will cut their first year's dues in half! After the first year, regular membership rate applies. They cannot have been a member or student member previously. To apply, they will need to call customer service at 800-639-2422 and talk to them directly – it cannot be done online.

AIAA also offers [Free Educator Associate Memberships](#) for educators in grades Kindergarten through 12 that are interested in the development and application of science, mathematics, and technology for their educational curriculum. To recommend a friend or colleague as an Educator Associate, contact Breanne Sutton for an application.

[Membership Upgrades](#) - To request membership upgrade information or nomination forms, contact Breanne Sutton or go to AIAA customer service at 800/639-AIAA (or 703/264-7500), or visit the AIAA Web site at: <http://www.aiaa.org>. See the following link for more information: <http://www.aiaa.org/content.cfm?pageid=183>

[Student Upgrades](#) - Any student who is a member of AIAA in good standing at the time of graduation will automatically receive one free year of professional membership and the second year at half price

AIAA Delaware Section Social Media

The AIAA Delaware Section web site is active. Please visit <https://info.aiaa.org/Regions/NE/Del/default.aspx> or navigate there via the AIAA National web site at: www.aiaa.org. We invite you to visit your Section's web site and provide any comments or suggestions.

Also, please visit any one of our many social media outlets:



[AIAA DE on the WWW](#)

[@AIAA_DE on Twitter](#)

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[AIAA DE on Facebook](#)